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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/554,624	10/27/2005	Ryouichi Koga	P28729	7272

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EXAMINER	
YOUNKINS, KAREN L	

ART UNIT	PAPER NUMBER
3751	

NOTIFICATION DATE	DELIVERY MODE
09/07/2010	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/554,624	KOGA ET AL.	
	Examiner	Art Unit	
	KAREN YOUNKINS	3751	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 June 2010*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-46* is/are pending in the application.

4a) Of the above claim(s) *21-46* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *3/26/2010, 6/21/2010*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. This action is responsive to the amendment dated 5/28/2010, and the Information Disclosure Statement filed 6/21/2010.

Election/Restrictions

2. Claims 21-22 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected species, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 5/28/2010. Claims 23-46 were withdrawn in a previous action.

3. Applicant's election with traverse of Species I in the reply filed on 5/28/2010 is acknowledged. The traversal is on the ground(s) that the search for the inventions identified would be coextensive or at least significantly overlap. This is not found persuasive because it is the position of the examiner that the search for the inventions would not be coextensive. Therefore, the search of the inventions would be a serious burden on the examiner.

The requirement is still deemed proper and is therefore made FINAL.

Specification

4. The abstract of the disclosure is objected to because "the cover that surrounds the pipe" should read --a cover that surrounds the pipe--. Correction is required. See MPEP § 608.01(b).

5. The disclosure is objected to because of the following informalities: Page 57 states “since stainless has an...". This statement is unclear as to what stainless is.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

8. Regarding Claim 1, it is unclear whether the applicant intends to claim the washing water. As currently written "the washing water" in lines 3 and 8 lack proper antecedent basis in the claim as washing water has only been functionally recited in line 2. Further instances of the limitation "the washing water" appear throughout the claims. It is noted that if the applicant amends the claim to specifically structurally claim the washing water the applicant may produce a product and process hybrid claim by claiming the method step of introducing the water. Thus, for the purposes of examination the examiner assumes the applicant intends to claim washing water functionally as supported by line 2.

9. Further regarding Claim 1, the language "a cover member having a spray hole, provided so as to surround said pipe, and integrally formed of a cylindrical metal whose front end is closed" renders the claim indefinite. It is unclear what the applicant intends to have a front end that is closed. Additionally there is insufficient antecedent basis for this limitation in the claim "front end".

10. The method step of "merging the washing water" in claim 2 makes the claim a hybrid product/process claim. This rejection would be overcome if the applicant amended the language "merging the washing water" to read "capable of merging the washing water".

11. It is unclear to the examiner how the spray member forms a spray space as set forth in claim 3. The specification sets forth that the spray member is equivalent to the flow path merger 204. The flow path merger merges two flow paths into one. There is no disclosed spraying occurring in the spray member. It appears that the applicant is attempting to define a special meaning to the language "spray space" but has failed to explicitly define this term in the specification, rendering the language indefinite. Clarification is requested.

12. Claim 3 recites the limitation "its peripheral surface" in page 5. There is insufficient antecedent basis for this limitation in the claim.

13. Regarding Claim 4, the language "a first space having a first inner diameter from said opening to said orifice" renders the claim indefinite. The definition of diameter is the length of a straight line passing through the center of a circle and connecting two points on the circumference. The distance referred to by the applicant, from opening to orifice, is not a circle. Therefore this distance can not be a diameter. Claim 4 goes on to further define second and third inner diameters upon the definition of the first inner diameter. Thus, it is unclear what the second and third inner diameters are since the first inner 'diameter' is unclear. Claims 7-8 recite "said first space has an inner diameter" and "said third space has an inner diameter". The use of this language

requires two distinct diameters, the ones claimed in claim 4 and the ones claimed in 7 and 8. However, the examiner believes the applicant intends to claim only one 'diameter' for each of the first, second, and third spaces.

14. Claim 6 recites the limitation "the axis of said second flow path" in page 5. There is insufficient antecedent basis for this limitation in the claim.

15. Further regarding Claim 6, the language "the washing water is discharged toward the outermost periphery of a swirl having no vorticity within said cylindrical space from said second flow path" renders the claim indefinite. The limitation of "a swirl" is unclear. There is not a swirl shown in the drawings or described in the specification. There is, however, a swirl chamber corresponding to the second space as already set forth by the applicant in a previous claim. It is unclear if the applicant intends to claim "a swirl" to be the second space or something entirely different. Clarification is required.

16. Claim 9 recites the limitation "said cylindrical space" in page 6. There is insufficient antecedent basis for this limitation in the claim. Further, it is unclear structural component the applicant intends to claim by "cylindrical space".

17. Claim 10 recites the limitations "the cross-sectional area of said first flow path" and "the cross-sectional area of said opening" in page 6. There is insufficient antecedent basis for these limitations in the claim.

18. Claim 13 recites the limitations "said metal" in page 7. There is insufficient antecedent basis for this limitation in the claim.

19. Claim 15 recites the limitations "the peripheral wall in the vicinity of the front end of said cover member" in page 7. There is insufficient antecedent basis for this limitation in the claim.

20. Regarding Claims 17 and 18, Claim 17 sets forth that the positioner is part of the spray member, however Claim 18 (dependent on Claim 17) contradicts that the positioner is part of the spray member. Clarification is required.

21. Regarding Claim 20, Claim 20 currently requires a second front end. However, there is only one front end described in the specification. For the purposes of examination the examiner assumes the applicant intends to claim the front end of 20 as the same front end in claim 17 (from which claim 20 depends).

22. In light of the above, the claims are examined as best understood.

Claim Rejections - 35 USC § 103

23. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

24. Claims 1-5, 7-10, 12, 14-17, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 5,873,524 to Bodelin.

25. Regarding Claims 1, 12 and 15, Bodelin teaches a nozzle device comprising a spray hole 20, a pipe 22/24/26 forming a first flow path that introduces the liquid to the spray hole (it is noted that the liquid may be water), and a cover member 17/10 having the spray hole (spray hole is provided at the end of cylinder 10). The cover member

surrounds the pipe and is integrally formed with the spray hole, see figure 1. The cover member is a pipe, therefore it is cylindrical, and is formed of brass. There is a space between an outer surface of the pipe and an inner peripheral surface of the cover member forming a second flow path that is capable of introducing washing water to the spray hole. Further, the second flow path is configured to surround the outer surface of the pipe in a circumferential (encircles the cover member) direction of the cover member. See figure 1. A part of a peripheral wall in the vicinity of a front end of the cover member is formed so as to have a flat surface (flat surface of the cylinder, shown on either side of 20 in figure 1), and the spray hole is formed on the flat surface.

Bodelin fails to show a closed 'front end' in the cover member 17/10. However, Bodelin teaches the cover member being connected to means for feeding liquid 19 such as a pump. Therefore, it would have been obvious to have a closed the cover member at this front end so nothing from outside the means for feeding liquid may enter the cover member/nozzle. It would have been further obvious to have made this closed front end having a substantially hemispherical shape as a change in form or shape is generally recognized as being within the level of ordinary skill in the art, absent any showing of unexpected results. In re Dailey et al., 149 USPQ 47.

The initial statement of intended use, and all other functional implications related thereto have been fully considered but do not appear to impose any patentably distinguishing structure over that disclosed by Bodelin.

26. Claim 14 amounts to a product-by-process limitation. Such a limitation does not operate to distinguish a claimed structure from a prior art structure that otherwise discloses the claimed structure.

27. Regarding claims 2-3, as previously discussed in pp-24 above, further a spray member 16 had an orifice shown by the vertical line at L1 in figure 1 (just before 18). During use, liquid is merged from the first flow path and the second flow path in the spray member. The liquid is then introduced to the orifice/spray hole. The spray member 16 forms a 'spray space' having an opening shown generally at 10 and the orifice 20 at the other end. The first flow path introduces liquid to the spray space from the opening and the second flow path introduces liquid to the spray space from a peripheral surface, see arrows indicating flow of liquid in figure 1. Further, the spray space has a cross-sectional area that gradually or continuously decreases from opening to orifice.

28. Regarding Claims 4-5, as previously discussed in pp-27 above, further the 'spray space' includes a first space having a first inner 'diameter' from said opening to said orifice, a second space having a second inner 'diameter' smaller than said first inner 'diameter', and a third space having a third inner 'diameter' smaller than said second inner 'diameter'. It is noted that the term 'diameter' renders the claim indefinite as discussed above and are treated as distances. The 'spray space' is an open area in the device. There are infinitely many distances of all sizes within the spray space. Liquid introduced from the second flow path is supplied to the second space, and all other spaces, as it moves through the device. The second space is a cylindrical space, and

the liquid introduced from the second flow path is supplied along an inner peripheral surface of the cylindrical space, see flow of liquid arrows in figure 1.

29. Regarding claims 7-8 and 16, as previously discussed in pp-28 above, further the spray hole has a larger inner diameter than the orifice. The spray hole and orifices are formed of circular openings comprising many smaller circular openings. Thus, the spray member hole has a larger inner diameter than the orifice. Similarly, the first space has an 'inner diameter'/distance that continuously decreases from the opening to the second space and the third space has an 'inner diameter'/distance that continuously decreases from the second space to the orifice.

30. Regarding Claim 9, as previously discussed in pp-28 above, the cylindrical space within 32 is larger than the diameter of the orifice, see figure 1. Bodelin fails to teach specific measurements of these values. Thus, Bodelin discloses the claimed invention except for the inner diameter of the cylindrical space being two to five times larger than the inner diameter of the orifice. It would have been an obvious matter of design choice to have made the inner diameter of the cylindrical space two to five times larger than the inner diameter of the orifice, since such a modification would have involved a mere change in the size of a component. A change in size is generally recognized as being within the level of ordinary skill in the art. In re Rose, 105 USPQ 237 (CCPA 1955).

31. Regarding Claim 13, Bodelin fails to teach the metal being stainless. Bodelin does however teach another portion of his device, 14, being stainless. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have made the metal from a stainless metal to avoid stains on the device.

32. Regarding Claim 10, as previously discussed in pp-26 above it would have been obvious to one having ordinary skill in the art to have modified the cross sectional area of the opening in the spray space to be larger than the cross sectional area of the first flow path depending on how much water a user wishes to be discharged from the device and at what flow rate a user wishes the liquid to be discharged.

33. Regarding Claims 17 and 20, Bodelin as discussed in pp-26 above fails to teach a 'positioner'/front end abutment portion abutting against an inner surface at the front end of the cover member as claimed. However, the examiner takes official notice that it would have been obvious to have provided a positioner as claimed to keep the cover member from moving within the device. The cover member is not integrally formed with the rest of the device, so it must be permanently positioned as shown in the drawings in order to operate as disclosed. It is noted that Bodelin does not show the front end in a figure and only briefly mentions that the front end is attached to a means for feeding liquid 19. The orifice is positioned relative to the spray hole, see figure 1.

Allowable Subject Matter

34. Claims 6, 11, and 18-19 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

35. The following is a statement of reasons for the indication of allowable subject matter: Regarding Claim 6, the swirl having no vorticity within the cylindrical space as best understood by the examiner was not found. Regarding Claim 11, the spray member being inserted into the front end of the cover member was not found.

Regarding Claims 18-19, the structure of the positioner as best understood by the examiner was not found.

Response to Arguments

36. Applicant's arguments with respect to claims 1-20 have been considered but are moot in view of the new ground(s) of rejection.

37. Claims 21-22 are currently withdrawn, and claim 47 has been cancelled.

Conclusion

38. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US Patent Application Publication no. 2001/0030247 teaches a spray device having first and second flow paths as claimed, and a similar spray tip to the disclosed. USPN 6,161,778 teaches a spray device having first and second flow paths that meet at a 'spray space', and the spray space has several compartments or zones. USPNs 3,829,013; and 3,182,860 teach similar first and second flow paths.

39. Any inquiry concerning this communication or earlier communications from the examiner should be directed to KAREN YOUNKINS whose telephone number is (571)270-7417. The examiner can normally be reached on Monday through Friday 7:30am to 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Huson can be reached on (571)272-4887. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/K. Y./
Examiner, Art Unit 3751

/Gregory L. Huson/
Supervisory Patent Examiner, Art Unit 3751